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RESULTS OF SCIENTIFIC RESEARCH
OF THE ACADEMY OF SCIENCES ARMENIAN SSR, 1948

The work of the Academy of Sciences Armenian SSR in 1948 concerned the solution of a great number of problems connected with actual tasks of the Republic's economy and with the over-all development of Soviet science.

The Sector of Mathematics and Mechanics made real progress in furthering the development of the theory of functions. Due to the perseverance of a group of young mathematicians who are expounding what was at first a very limited doctrine, there is every reason to speak about the emergence of Yerevan's own school of mathematics. The same sector is working on problems in the theory of mechanics dealing with the theory of elasticity, and such important problems as the creep of materials, particularly the creep of concrete.

The Institute of Physics has been concentrating on the study of the nature of elementary particles in cosmic rays at various altitudes. A wealth of experimental material has been obtained. This material has furnished a basis for research on the mass spectra of new particles -- varitrons, discovered by the Alikhanov brothers in 1946 - 1947. A number of new cosmic ray processes has been discovered.

The Astrophysical Observatory in Byurakan became active in 1948. Observation projects have developed here which are of great significance. It is necessary that Soviet observatories include in their observations the less brilliant objects, more remote stars and extragalactic nebulae, since the Americans desire to monopolize this field. This year, definite progress was evidenced by the mastery of an instrument designed for observing very weak stars (to the 18th magnitude) and extragalactic nebulae. The Astrophysical Observatory detected in our galaxy the presence of an entirely new class of stellar systems -- so called "stellar societies," the study of which is contributing much to the solution of problems concerning the structure of the galaxy as a whole and the science of the origin and evolution of heavenly bodies.

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The academy's chemists made great progress in 1948, centering their attention on two basic problems closely connected to industrial developments.

Geologists have been surveying the republic's oil potentialities, and though this field is new to Armenia, the results obtained have shown that wide-scale prospecting is merited. A study of the natural resources for the glass industry has revealed that pumice-quartz sands present a new raw material.

The main efforts of the Hydroelectric Power Engineering Institute have been devoted to projects connected with the construction of Armenia's largest hydroelectric station, Gyumunges. At present, models of the various construction projects are being built, and in some cases, tests have been completed.

The Institute of Genetics has developed two new types of wheat, "artamat," which is now being grown exclusively throughout the Ararat valley, and "agvard," which is being used in foothill regions. New types of grapes have also been developed.

Soil research and test plantings on territory reclaimed from the Sevan prove that the land has definite agricultural possibilities, and work is being conducted towards their realization.

The Microbiological Institute has introduced new bread yeasts which are presently in use at the Yerevan Bread Plant.

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